



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,378	03/20/2006	Viktor Vladimirov Kassovski	016998-003800US	4274

20350 7590 08/28/2009  
TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER
----------

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
----------	--------------

2611

MAIL DATE	DELIVERY MODE
-----------	---------------

08/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/532,378

**Applicant(s)**KASSOVSKI, VIKTOR  
VLADIMIROV**Examiner**

LAWRENCE B. WILLIAMS

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/20/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☒ Claim(s) 7-13 and 19-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/21/2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because:

a.) In Fig. 1, examiner suggests applicant label elements 131-13n, as “column output conductors”, 121-12n as “switch control conductors”, elements m.n as “sensing elements”, elements 141-14n as “modulators”, and element 150 as “combing means” as referenced in specification.

b.) In Fig. 3, examiner suggests applicant label elements 151, 153, 154 and 161-16n as “filtering means”, “generator means”, “demodulation means” and “registers”, respectively as referenced in specification.

It is office policy to request from applicants that submitted figures contain both text and numerical labels to allow individuals viewing each figure to be able to determine the designation of each element in the figure without having to go into the specifications.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because: The examiner suggests applicant delete line 10, “Figure 1”. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

3. Claims 7-13, 19-32 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 7-13, 19-32 have not been further treated on the merits.
4. Claim 29 is objected to because of the following informalities: Claim depends upon itself, i.e., claim 29 reads, "A sensing device according to claim 29". The examiner assumes applicant meant, "A sensing device according to claim 28". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims, 1, 14 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

- Claims 2-13, 15-32 are rejected based on their dependency upon rejected claims 1, and 14.

7. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites the limitations, "several such groups". It is unclear as what "such groups" refers to since applicant has disclosed a first and a second group in claim 2.

8. Claim 32 recites the limitation "a sensing device" in line 1. Claim 32 applies this claimed sensing device "to any preceding claims". Claims 1-13 discloses a method of transferring signals and makes no mention of "a sensing device". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-6, 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Jensen (US Patent 6,078,356).

(1) Regarding claim 1, Jensen discloses in Fig(s). 1-3, a method of transferring signals from a plurality of individual sensing elements (Fig. 2, SENS, 26) provided on a first integrated circuit (Jensen discloses the sensors disposed in an array of rows and columns (Abstract). An integrated circuit or equivalent would be inherent) to a processing means (Fig. 1, Image Process, 54) provided on a second integrated circuit (Jensen discloses signals from the array transmitted

to a distant location for signal processing to extract imaging data (col. 2, lines 13-16). Thus the processing means would inherently be provided on a second integrated circuit) comprising the steps of sequentially sampling the output of a number of sensing elements in a predetermined sequence (col. 2, lines 17-22; col. 4, lines 36-41) to create a first signal, modulating the amplitude of a constant frequency signal to create a second signal (col. 4, lines 46-50), transmitting said second signal from said first integrated circuit (Abstract, Jensen discloses the signal transmitted to signal processing equipment) to said second integrated circuit, demodulating (Fig. 1, Demux; Fig. 3) said second signal to regenerate said first signal and passing said regenerated first signal to said processing means (Fig. 1, from Demux, 48 to Store, 50 and Image Process, 54).

(2) Regarding claim 2, Jensen also discloses a method according to claim 1 wherein the outputs of a first group of individual sensing elements are sampled and are then used to modulate a carrier signal of constant known frequency and, the output of a second group of individual sensing elements is simultaneously sampled and used to modulate a carrier signal of a different constant known frequency (col. 4, lines 36-50; Jensen discloses sampling intervals for the signal outputted by the sensors in each column. Each column would constitute a group of sensors), both modulated signals being simultaneously transmitted to said second integrated circuit (Fig(s) 1-2 show the modulated signals summed (68) and simultaneously demodulated (Fig. 3 discloses simultaneous demodulation through PLLs) after arriving at said second integrated circuit.

(3) Regarding claim 3, Jensen also discloses wherein outputs of several such groups of individual sensing elements are simultaneously sampled, modulated and transmitted and demodulated (Fig. 2-3; col. 4, lines 36-50).

(4) Regarding claim 4, Jensen also discloses a method according to Claim 3 wherein the groups of sensing elements correspond to individual rows or columns in a sensing array (Abstract discloses sensors disposed in an array of rows and columns), the sampling sequence within the group starting with a sensor at one end of the said row or column and finishing with the sensor at the opposite end of said row or column (col. 9, lines 8-13).

(5) Regarding claim 5, Jensen also discloses a method according to Claim 4 wherein each row or column is provided with dedicated modulating means (Fig. 2, VCO, 66; col. 9, lines 8-13; Jensen discloses the multiplexers selecting the signals of the sensors from the columns which amounts to a selection by rows. The signals are provided from the multiplexer, 58 to modulation means (VCO, 66). Thus each row has its own dedicated modulation means.) and the modulated signals are subsequently combined by a suitable combining means (Fig. 2, Sum, 68).

(6) Regarding claim 6, Jensen also discloses a method according to claims 1-5 wherein the sampling process is repeated instantly (Fig. 8; Fig. 8 discloses the demux of the transmitted sensor signals. In view of the received sensor signals for demux (time line), it is inherent that the sampling process is repeated substantially instantly).

(7) With regard to claim 14, Jensen discloses in Fig(s). 1-3, a sensing device comprising an array of individual sensing elements (Fig. 2, SENS, 26) provided on a first integrated circuit (Jensen discloses the sensors disposed in an array of rows and columns (Abstract). An integrated circuit or equivalent would be inherent) an processing means (Fig. 1, Image Process, 54) for the output said array of said sensing elements provided on a second integrated circuit (Jensen discloses signals from the array transmitted to a distant location for signal processing to extract imaging data (col. 2, lines 13-16). Thus the processing means would inherently be provided on a

second integrated circuit), said circuits being linked by a single conducting connection (Fig. 2 discloses the signals transmitted as a summed signal through a single signal. The Abstract discloses the use of a fiber optic link as a single conducting connection. The examiner has interpreted “conducting” as “serving as a channel or medium”; Jensen also discloses “a single signal transmission line”; col. 9, lines 23-25), sampling means (Fig. 2, S/H, 62) for sequentially sampling the output of a number of sensing elements in a predetermined sequence (col. 2, lines 16-22; col. 4, lines 36-41) to create a first signal, signal generator means (Fig. 2, VCO, 66) for generating a carrier signal of a constant known frequency, modulation means (Fig. 2, VCO, 66) for modulating said carrier signal with said first signal to generate said second signal, and transmission means (Fig. 2, Drive, 70; Abstract; Jensen discloses the signal transmitted to signal processing equipment) for transmitting said second signal to the second integrated circuit incorporating receiving said second signal, means for demodulating (Fig. 1, 3, Demux, 48) said second signal to regenerate said first signal and means for processing (Fig. 1, Image Process, 54) said regenerated first signal.

(8) Regarding claim 15, Jensen also discloses a sensing device according to claim 14 wherein the outputs of a first group of individual sensing elements are sampled and are then used to modulate a carrier signal of constant known frequency and, the output of a second group of individual sensing elements is simultaneously sampled and used to modulate a carrier signal of a different constant known frequency (col. 4, lines 36-50; Jensen discloses sampling intervals for the signal outputted by the sensors in each column. Each column would constitute a group of sensors), both modulated signals being simultaneously transmitted to said second integrated circuit (Fig(s) 1-2 show the modulated signals summed (68) and simultaneously demodulated



(Fig. 3 discloses simultaneous demodulation through PLLs) after arriving at said second integrated circuit.

(9) Regarding claim 16, Jensen also a sensing device according to claim 14, wherein outputs of several such groups of individual sensing elements are simultaneously sampled, modulated and transmitted and demodulated (Fig. 2-3; col. 4, lines 36-50).

(10) Regarding claim 16, Jensen also a sensing device according to claim 15, wherein outputs of several such groups of individual sensing elements are simultaneously sampled, modulated and transmitted and demodulated (Fig. 2-3; col. 4, lines 36-50).

(11) Regarding claim 17, Jensen also discloses a sensing device according to Claim 16 wherein the groups of sensing elements correspond to individual rows or columns in a sensing array (Abstract discloses sensors disposed in an array of rows and columns), the sampling sequence within the group starting with a sensor at one end of the said row or column and finishing with the sensor at the opposite end of said row or column (col. 9, lines 8-13).

(12) Regarding claim 18, Jensen also discloses a sensing device according to Claim 17 wherein each row or column is provided with dedicated modulating means (Fig. 2, VCO, 66; col. 9, lines 8-13; Jensen discloses the multiplexers selecting the signals of the sensors from the columns which amounts to a selection by rows. The signals are provided from the multiplexer, 58 to modulation means (VCO, 66). Thus each row has its own dedicated modulation means.) and the modulated signals are subsequently combined by a suitable combining means (Fig. 2, Sum, 68).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Weis discloses a method of transferring signals from a plurality of individual sensing elements provided on a first integrated circuit to a processing means provided on a second integrated circuit in US Patent 5,898,517.

b.) Endo discloses Image Signal Reproduction Circuit For Swing Image Sensor in US Patent 4,612,581.

c.) Haradat et al. discloses Solid State Image Sensor With High Resolution in US Patent 4,543,601.

d.) Haradat et al. discloses Electronic Image Sensing Apparatus in US Patent 4,535,363.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tsfaldet Bocure/  
Primary Examiner, Art Unit 2611

lbw  
August 27, 2009